Growth Assessment: Weighing and Measuring WIC Participants

Self-Paced Training Guide

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WIC GROWING HEALTHY FAMILIES

A WIC Training Guide

Texas Department of Health

Bureau of Nutrition Services

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The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a food and nutrition program benefitting infants, children under age 5 and pregnant, postpartum and breastfeeding women with low to moderate incomes.

WIC is an equal opportunity program. If you believe you have been discriminated against because of race, color, national origin, age, sex or disability, immediately call the State WIC Office at 1-800-942-3678.

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About This Training Guide:

This Weighing and Measuring training guide is one in a series of self-paced training guides. Self-paced learning allows you, the learner, to proceed through the subject matter and learning process at your own pace.

Each training guide includes exercises and an answer key.

- The guide contains the subject matter and can be used as an on-the-job reference when you are finished.
- The exercises in the manual are questions and practical activities that reinforce learning.
- The answer key is available at the back of the manual. The answer key contains answers to the questions and practical activities found in the training guide.

The purpose of this training guide is to facilitate accurate and consistent measurements of women, infants, and children. Measurements must be accurate for the following reasons:

1. Program Eligibility: Measurements are used in part to determine program eligibility.
2. Counseling: Inaccurate growth assessments can lead to serious counseling errors.
3. Nutritional Surveillance and Planning: Measurement information is sent to the Center for Disease Control (CDC) and the United States Department of Agriculture (USDA) to be used for planning nutrition services.

Some of the information in this training guide was adapted from the Indiana WIC Program and the Virginia Department of Health.

Instructions

Read the information in this training guide and complete the questions at your own pace. When you have finished all the questions, your answers will be checked by your supervisor. Where there are incorrect answers, you will be asked to reread the section(s) to find the correct answer(s). If you answer the questions correctly, you may begin working on another training guide in the series.

Chapter 1: Why Do We Weigh and Measure Participants

The Objectives for this chapter are:

- **Staff will recognize the reasons why WIC participants are weighed and measured.**
- **Staff will define anthropometry.**
- **Staff will list two forms of anthropometric measurements conducted by WIC.**
- **Staff will determine which participants are measured for height and which for length.**

I. Why We Weigh and Measure

Obtaining weight and height measurements is mandated by Federal legislation in **7 CFR Part 246.7** for determining participant eligibility in the WIC Program. In Texas, **WIC Policy CS:04.4** defines the purpose and procedures for weighing and measuring. **WIC Policy CS:04.9** relates to the use of heights and weights obtained not more than 60 days prior to eligibility determination. The measurements collected are known as anthropometric measures, are part of the nutritional assessment procedure, and are a benefit of program participation. The purpose of weighing and measuring applicants is to:

- determine eligibility for WIC
- assess for nutritional risk
- provide appropriate food packages and nutrition education

Anthropometry

Anthropometry is the collection of physical measurements such as weight, height or length, head circumference, and body thicknesses. These measures assess growth. In WIC, height or length and weight are used to assess growth. For children under 36 months and infants, we measure their length. For adults

and children 36 months and older, we obtain a height. For all participants, we weigh using the proper equipment.

Height/length and weight are the best indicators of nutritional health. Repeated measurements can be compared and used to determine if a possible problem exists or if there is a trend for inappropriate growth and development (Whitney, 1996).

Use of Measurements

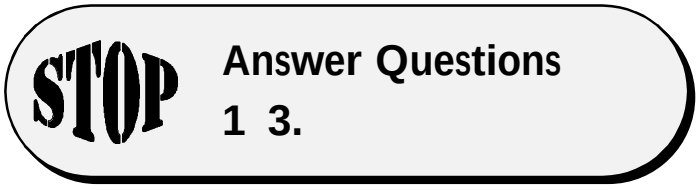
The use of anthropometric measures to assess growth is a vital part of the WIC Program, but only if they are accurate. Small errors in measuring can lead to big errors in assessment and counseling. This training guide will discuss fully the steps involved in obtaining accurate measurements:

1. Weigh and measure participants (collect data).
2. Plot measurements on appropriate growth chart. For women, use a gestational wheel to determine estimated date of delivery and current week gestation. For children, it will be necessary to calculate age accurately.
3. Assess growth information for eligibility and counseling purposes.
4. Share growth information with participants and/or caregivers.

The information gathered as height/length and weight, and the data plotted on growth charts is assessed using the Nutrition Risk Codes found in the Anthropometric section of Participant Forms.

This training guide will also cover handling non-standard situations.

After the anthropometric data is plotted on the growth charts and assessed, the appropriate Nutrition Risk Code(s) is/are checked in the Anthropometric section of the appropriate participant form.



Place a mark on the line next to the correct answer(s) to the questions.

1. Of the following, which are the reason(s) why we weigh and measure participants:

_____**a.** nutritional assessment and education

_____**b.** eligibility

_____**c.** appropriate benefits

_____**d.** all of the above

2. Height, length, and weight are all forms of _____ _____ collected by the WIC staff.

3. Aida Lopez brings in her 35 month old daughter, Maria, in for recertification. In order to recertify her, the staff must obtain her weight and _____.

Chapter 2: Weighing and Measuring Equipment and Procedures

Most children and women can be measured using standard equipment and procedures. Those who cannot will be discussed in the Chapter 4 “Special Considerations.”

The Objectives for this chapter are:

- **Staff will identify the correct equipment for weighing and measuring participants.**
- **Staff will list the standard procedures for weighing and measuring participants.**

In order to ensure accurate and reliable measurements for identifying individuals at nutritional risk, Federal code **7 CFR Part 246.7** mandates the collection of applicant/participant weights. Texas **WIC Policy CS:04.4.2** states that each applicant/participant will be weighed on standard equipment.

I. Weighing Participants

Weighing Equipment

Weight should be obtained using either a pediatric or adult beam-balance scale with non-detachable weights and a "zero-balance adjuster" (screw-type preferred).

Placement of Equipment

Pediatric beam balance scales should be placed on a sturdy table. Adult balance-beam scales should be placed on an uncarpeted floor, where possible. If the floor is carpeted, place the scale on a ¾-inch-thick piece of plywood, plastic, acrylic, or Plexiglas® material.

Which Equipment to Use

1. Infants and children less than 36 months of age* are to be weighed using a pediatric, table model beam-balance scale. Measurements should be readable to the nearest one-half ounce.
2. Women and children three years and older are to be weighed using an adult floor-model, beam-balance scale. Measurements should be readable to the nearest ounce.
3. Electronic digital scales may be used if they meet the following USDA guidelines:
   - **a.** Accuracy of measurements are within one-half ounce for pediatric scales, and within four ounces for adult scales.
   - **b.** The scale has a zero adjustment.
   - **c.** Measurements are accurate, with minimum error at both low and high ends of the scale range.
   - **d.** The scale provides measurement reproducibility (i.e. consistent readings).
   - **e.** The scale is durable and easy to maintain.

NOTE: Bathroom and other spring-type scales should NOT be used.

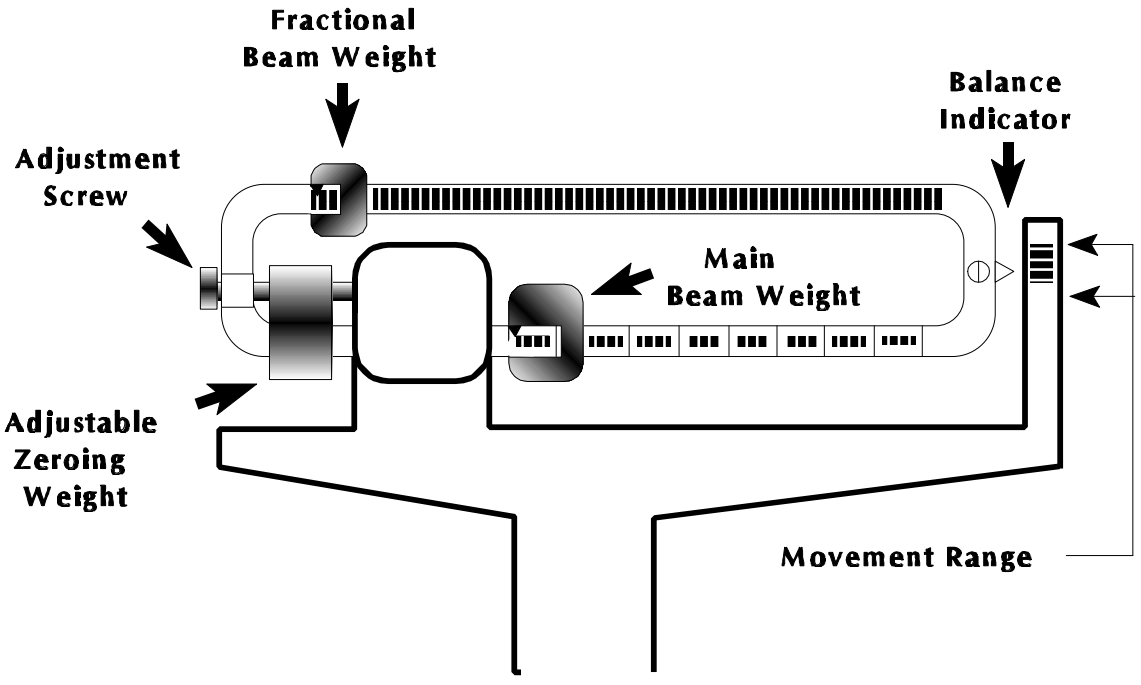
***** If a child under the age of 36 months exceeds the weight limit for the pediatric scale, they can be weighed on an adult scale. For children who may not be able to stand on the adult scale, weigh the parent/guardian first, and record their weight. Then have the parent/guardian step off the scale, pick up the child, and step back on the scale so that you can weigh both of them together. Record the weight of both. Subtract the weight of the parent/guardian alone from the recorded weight of both (parent/guardian holding the child) and record the difference between the two weights as the child's weight.

Remember you must document if the child was weighed using the adult scale, or if the child was held and weighed. If the adult scale is used, also use the wall-mounted measuring system when possible to obtain the child's height.

Balancing Scales:

Each day before clinic begins, a trained staff member should balance all scales using the following procedure(s):

1. Balance the pediatric scales using scale paper. Remove everything from the adult scales.
2. Place the upper (fractional weight) and the lower (main weight) directly over their respective zeros. (See the diagram that follows.)
3. Turn the adjustment screw on the left side of the beam until the balance indicator is centered. The balance indicator is centered when it freely rests in the center of the movement range. For beam-balance scales which do not have an adjustment screw, follow the manufacturer's directions for zero balancing.
4. Return scales to zero after **each** use.
5. If using electronic scales, follow the manufacturer's instructions for calibration.



Weighing Procedures

Pediatric Weight: For Children less than 36 months

Supplies:

Pediatric Beam-Balance Scale or Electronic Digital Pediatric Scale
Scale Liner or Table Paper

Preparations:

- Remove shoes and heavy outer clothing such as coats, jackets, and bulky sweaters.
- Weigh infants up to 12 months in a dry diaper and lightweight clothing.
- Have the parent/guardian check for a dry diaper.
- Do not subtract the weight of the dry diaper or clothing.

Procedure:

1. Place clean paper on scale**.**
2. Make sure the scale is balanced at zero weight according to the procedures described on the previous page.
3. Gently place the infant or child on her back in the center of the covered scale bed. The infant should be placed lying down in a comfortable position unless she can sit up alone. Make sure the child isn't holding on to the scale, and the caretaker isn't touching the child or the scale during the procedure.
4. Starting with the weights at zero, slowly move the main beam weight to the right until the balance indicator begins to tip down, then move it back to the left until the main beam weight rests in one of the grooves. The balance indicator will be pointing toward the top of the movement range.
5. Move the fractional weight to the right until the balance indicator is centered.
6. Read the weight to the nearest ounce. Add the weight indicated on the fractional beam to the weight indicated on the main beam.

Example:

	Main beam weight	20 lbs
	Fractional beam weight	+ 2 lbs 3 oz.
.	**Total weight**	**22 lbs 3 oz.**

7. Record the weight on the growth chart and in the appropriate boxes on the Participant form.

8. Return weights to zero.

Common Errors:

- Improper equipment used.
- Scale not properly balanced.
- Necessary clothing not removed.
- Child not placed in center of scale bed.
- Child holding on to scale or caretaker.
- Caretaker touching infant/child on scale.
- Child not remaining still on scale.
- Weights not positioned at zero before taking measurements.
- Not asking parent if the infant's diaper is dry or wet.

Adult/Standing Weight: For Women and Children 36 months or older

Supplies:

Adult Beam-Balance Scale or Electronic Digital Scale

Preparations:

- Have the participant remove shoes, and heavy outer clothing such as coats, jackets or bulky sweaters.
- If a child is wearing a diaper, have parent/guardian check to make sure it is dry.

Procedure:

1. Make sure the scale is balanced at zero weight.
2. Have the participant step onto the center of the scale platform with feet slightly apart for better balance.
3. Move the main beam weight to the right until the balance indicator begins to tip down, then move it back to the left until the main beam weight rests in one of the grooves. The balance indicator will point to the top of the movement range.
4. Move the fractional weight to the right until the balance indicator is centered.
5. Read the measurement to the nearest ounce. Add the weight indicated on the fractional beam to that indicated on the main beam.
6. Record the measurement on the growth chart and in the appropriate boxes on the Participant form.
7. Return weights to zero.

Common Errors:

- Improper equipment used.
- Scale not properly balanced.
- Footwear and heavy outer clothing not removed.
- Individual not properly centered on scale platform.
- Individual holding on to scale or some other object.
- Individual not remaining still on scale.
- Weights not positioned at zero before taking measurements.
- Not asking parent if the child's diaper is dry or wet.

II. Measuring Participants

Federal Code **7 CFR 246.7** also mandates the accurate and reliable measurements of lengths or heights. Texas **WIC Policy CS: 04.4.1** describes the procedures for proper use of measuring equipment.

Length/Height Measurement Equipment

Length (lying down) should be obtained using a recumbent board consisting of three parts:

- A flat, calibrated board
- A stationary headpiece that is at a right angle to the calibrated board, and is wider and taller than the head
- A moveable footboard that is also at a right angle to the calibrated board

NOTE: A pediatric exam table is ***not*** acceptable for measuring length.

Height (standing) should be obtained using either a metal or other non-stretchable measuring tape in conjunction with a 6-inch-deep right angle headpiece or a full-length measuring board.

- The measuring tape should be flat, made of non-stretchable material, and readable in increments of inch.
- The headpiece should be wide and deep enough (at least 6 inches) to assure measurement of the crown of the head.
- The headpiece should be held parallel to the floor and at a right angle to the measuring surface while the height measurement is obtained.

  NOTE: ***Do Not*** use the hinged headpiece on a beam-balance scale to obtain standing height.

Placement of Equipment

The recumbent board should be placed on a flat, hard surface such as a table.

Non-stretchable tape or a full-length board should be firmly attached to a flat, vertical surface, such as a wall.

- If wall mounted, select an area without a baseboard or carpet.
- Place the "zero" mark of the tape exactly at the point where the floor and the vertical surface (wall) meet.

Which Equipment to Use

1. Infants and children less than 36 months should be measured using the recumbent board.
2. Women and children three years (36 months) and older should be measured using the non-stretchable measuring tape or full-length measuring board mounted to the wall.

NOTE: Children older than 3 years who are so small that their height cannot be obtained using the adult equipment should be measured using the recumbent board. Likewise, children less than 3 years old who are too big to be measured using the recumbent board should be measured using the non-stretchable tape or full-length board. Document the procedure. These exceptions will be explained in more detail later in the instructions.

> **Precautionary Measure**
> To prevent the spread of disease and parasites such as head lice, be sure either to cover measuring board headpieces with fresh scale paper or wipe them down with a disinfecting solution between participants.

Measuring Procedures

Pediatric Recumbent Length: For Children less than 36 months

Supplies:

Recumbent Board
Scale Liner or Table Paper

Preparations:

- Cover the board with scale liner or table paper.
- Remove shoes and heavy/bulky outer clothing such as coats, jackets or bulky sweaters.
- Ask parent or guardian to remove hats, hair barrettes or anything else in the child's hair which could prevent obtaining an accurate measurement from the CROWN of the head.

Procedure:

1. Place the infant or child on her back on the recumbent board.
2. Have an assistant or parent/guardian hold the crown of the child's head firmly against the headpiece until the measurement is complete.
3. Make certain that the child is looking up and that the head, torso, and legs are in a straight line.
4. Hold the child's legs together just above the knees and gently push both legs down against the recumbent board with one hand, fully extending the child.
5. With your other hand, slide the footboard towards the child's feet until the heels of both feet are flat against the footboard (toes pointed upward).
6. Read the measurement to the nearest 1/8 inch. (If the measurement falls between 1/8 inch increments, round up.)
7. Record the measurement on the growth chart and in the appropriate boxes on the Participant form.

NOTE: For premature infants, see instructions in **Chapter 5: Special Considerations**.

Common Errors:

- Improper equipment used.
- Hat, hair barrettes, or adornments not removed.
- Necessary clothing not removed.
- Child's head not firmly against headpiece.
- Child not looking up.
- Legs not straightened or properly positioned.
- Heels not flat against the footboard.
- Only one leg extended and measured.

After each measurement, if scale paper is not used, disinfect the headpiece to prevent spread of head lice and other parasites.

Adult/Standing Height (Stature): For Women & Children 36 months and older

Supplies:

Full-length wall-mounted measuring board, or metal or other non-stretchable measuring tape and 6 inch deep right-angle headpiece mounted on a wall that is smooth and doesn't have moldings or baseboards. (Do NOT use the measuring rod on the adult beam-balance scale because it is not accurate.)

Preparation:

- Have the participant remove shoes and heavy outer clothing such as coats, jackets, or bulky sweaters.
- Have the participant remove hat and hair barrettes or anything in the crown of the hair that would prevent accurate measurement.

Procedure:

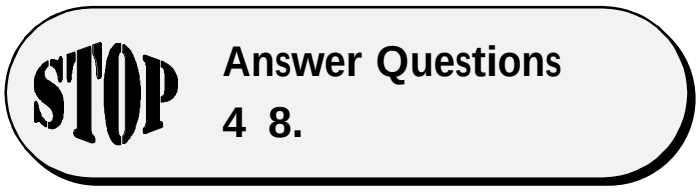
1. Have the participant stand with her back against the wall on a flat floor directly in front of the measuring board or tape. The tape should run down the center of her back. Make sure her feet are slightly apart and her back is as straight as possible. The heels, buttocks, and shoulder blades should touch the wall or surface of the measuring

board. The participant should look straight ahead with head erect but not touching the wall.

2. Place the headpiece flat against the wall and at a right angle to the head. Lower the headpiece until it touches the crown of the head.
3. Hold the headpiece steady and read the measurement at eye level. If the individual is taller than the staff member obtaining the measurement, the staff should use a foot stool to read the measurement at eye level. Read the measurement to the nearest 1/8 inch. (If the measurment falls between 1/8 inch increments, round up.)
4. Record the measurement on the growth chart and in the appropriate boxes on the Participant form.

Common Errors:

- Improper equipment used.
- Improper mounting of equipment.
- Footwear, heavy outer clothing, hat, and hair barrettes not removed.
- Feet not flat on floor.
- Heels, shoulders, and buttocks not touching the wall.
- Knees bent.
- Head not held erect.
- Measurement not read at eye level.
- Head touching wall.



Place a mark on the line next to the correct answer(s) to the questions.

4. A child 34 months of age should be measured using a

_____**a.** Wall mounted board or measuring tape

_____**b.** Recumbent measuring board

_____**c.** Measuring rod on an adult beam-balance scale

5. The length of an infant should be measured to the nearest

_____**a.** inch

_____**b.** ¼ inch

_____**c.** ½ inch

_____**d.** whole inch

6. When measuring the standing height of a child, the following should be in contact with the wall:

_____**a.** head, shoulders, and heels

_____**b.** head, buttocks, and heels

_____**c.** shoulders, buttocks, and heels

7. In the list below, mark the weighing and measuring procedures that are acceptable:

_____**a.** Weighing and measuring infant in lightweight clothing.

_____**b.** Being sure that one leg is held straight while measuring.

_____**c.** Using measuring bar on upright beam-balance scales to obtain height.

_____**d.** Using pediatric exam table.

_____**e.** Parent/guardian/caretaker removing hair adornments before measuring.

_____**f.** Using two people to measure infant, one to hold head firmly against board and one to extend legs and push footboard against heels.

_____**g.** Zero-balancing scales before weighing.

_____**h.** Placing beam-balance scale on a carpeted floor.

_____**I.** Removing heavy clothing such as sweaters and jackets when measuring a child.

8. Height measurements, using the wall-mounted measuring board, should be read at

_____**a.** sea level

_____**b.** eye level

_____**c.** from below, looking up

_____**d.** from above, looking down

_____**e.** an angle using a level